

Notice of Allowability

Application No.

09/489,895

Examiner

Dwin M Craig

Applicant(s)

HENKEL ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9-28-2004.
2. ☒ The allowed claim(s) is/are 1-8.
3. ☒ The drawings filed on 6-30-2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

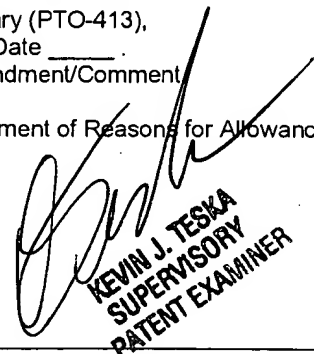
5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

DETAILED ACTION

And

NOTICE OF ALLOWANCE

1. Claims 1-8 are allowed.

Double Patenting

2. In regards to the Applicants arguments concerning the rejections of **Claims 2 and 3** under the Judicially created doctrine of obviousness-type double patenting as being unpatentable over **Claims 1-6 of U.S. Patent No. 6,622,287**. Applicants argued in the last response that;

“U.S. Patent 6,622,287 does not disclose creating a refined instruction set derived from captured gate-level energy simulation data.”

The Examiner has found this argument to be persuasive and withdraws the earlier Judicially created doctrine of obviousness-type double patenting rejections of **Claims 2 and 3**.

Claim Rejections - 35 USC § 112

3. After a review of Applicant's specification and in view of Applicant's arguments the Examiner has determined that the claims are teaching to the specification in that they are directed towards a *“refined instruction set derived from captured gate-level energy simulation data.”* Which is enabled and supported by the specification, *more specifically, Figure 7 and page 9*.

The Examiner withdraws the 35 U.S.C. 112 second paragraph rejections of **Claims 1, 2, 4, 6, 7 and 8**.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance:

The prior art does not teach or make obvious the following limitations, in combination with the other limitations recited in Applicant's independent claims:

"Determining if no data dependencies or no correlation between instructions of the initially. Defined instruction set are present, and if so, increasing the complexity of the initially defined instruction to create a refined instruction set; Determining if data dependencies or correlation between instructions of the initially defined instruction set are present, and if so, decreasing the complexity of the initially defined instruction set to create a refined instruction set;"

As enabled by Figure 7 and the description on page 9 of Applicant's specification this limitation is a non-obvious modification over the prior art.

Applicant argued in the last correspondence, dated 28 September 2004 that;

"With respect to the art-based rejections, Applicant's undersigned representative pointed out that claim 1 recites the creation of an instruction set that models captured gate-level simulation data for a core model. An instruction set (e.g., read-buff, write-buff, reset, transmit data, etc.) is created for the core model and these instructions can be used by a higher level simulation (individually or collectively) to model the energy consumption for a particular operation involving one or more instructions. Applicant's undersigned representative noted that at least U.S. Patent No. 6,096,089 fails to teach or suggest this feature of the claimed invention."

After a review of the argument made by the Applicant and a review of the 35 U.S.C. 103(a) rejections of the claims, the Examiner notes that the prior art of record, *specifically U.S. Patent 6,096,089*, fails to teach or make obvious the limitation of "creation of an instruction set" as argued by the Applicant. This argument, in combination with the previous arguments presented, as well as Applicant's responses to the prior art of record and the instant amendments to Applicant's claim language, have been, in combination, persuasive such that the claimed limitations are non-obvious modifications over the prior art.

Dependent Claims 3 and 5 are allowable as they depend upon allowed base claims.

4.1 Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4.2 The following list of prior art references, now made of record, disclose methods to determine power consumption in an electronic device:

1. **U.S. Patent 6,075,932** teaches a method of power determination based on output load capacitance.
2. **U.S. Patent 6,397,170** teaches gate level power estimations based on weighted toggle counts.
3. **U.S. Patent 6,151,568** teaches a power estimation software system with a scenario database.
4. **"Instruction Level Power Model of Microcontrollers"** by Chaitali Chakrabarti and Dinesh Gaitonde, *IEEE 1999*, discloses modeling power consumption on a micro-controller based on the instructions that are executed.
5. **"Power Analysis of Embedded Software: A First Step Towards Software Power Minimization"** by Vivek Tiwari, Sharad Malik, and Andrew Wolf teaches power estimation on embedded systems.

Conclusion

5. Claims 1-8 are allowed.

5.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwain M Craig whose telephone number is 703 305-7150. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC



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